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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,747	02/11/2002	Pantas Sutardja	MP0096	9964
23624	7590	12/22/2004	EXAMINER	
MARVELL SEMICONDUCTOR, INC. INTELLECTUAL PROPERTY DEPARTMENT 700 FIRST AVENUE, MS# 509 SUNNYVALE, CA 94089			TORRES, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Appli ati n No.

10/074,747

Applicant(s)

SUTARDJA ET AL.

Examiner

Joseph D. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-180 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 24-33, 38-47, 65-74, 88-97, 102-111, 118-137, 155-164 and 171-180 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/11/2002.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

Continuation of Disposition of Claims: Claims withdrawn from consideration are 11-23,34-37,48-64,75-87,98-101,112-117,138-154 and 165-170.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-10, 24-33, 38-47, 65-74, 88-97, 102-111, 118-137, 155-164, 171-180, in the reply filed on 08/20/2004 is acknowledged.

Claims 11-23, 34-37, 48-64, 75-87, 98-101, 112-117, 138-154, 165-170 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 08/20/2004.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: '50' in Figure 3 and '100' in Figure 6. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the

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changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 65-74, 88-97 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 65 recites, "A computer readable medium having stored thereon". The Examiner asserts that claim 65 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. There is no indication that the computer program set forth in the body of the claims provides any useful work for the computer readable medium; and nowhere in the specification does the Applicant teach that the body of the claims are directed to providing any useful work for a computer-readable medium.

The Examiner asserts that claim 88 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. There is no indication that the computer program set forth in the body of the claims provides any useful work for the computer readable medium; and nowhere in the specification does the Applicant teach that the body of the claims are directed to providing any useful work for a computer-readable medium.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claims 1-10, 24-33, 38-47, 65-74, 88-97, 102-111, 118-137, 155-164 and 171-180 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. Claim 1 recites, "A communication encoding method". See MPEP § 2172.01. The omitted elements are: how the limitations in the body of the claim are related to communication encoding.

Claim 1, 24, 38, 65, 88, 102, 118, 128, 155 and 171 recite, "processing the initial binary data based on the comparison". The term "based on" is indefinite since it omits essential elements necessary to define the relationship between the processing and the comparison.

Claim 38 recites, "A communication encoding apparatus". See MPEP § 2172.01. The omitted elements are: how the limitations in the body of the claim are related to communication encoding.

Claims 10, 33, 47, 74, 97, 111, 127, 137, 164 and 180 recite; "wherein a symbol boundary of an encoded symbol does not change relative to error correction coding." The omitted elements are: how a symbol boundary relates to any of the other data structures such as "initial binary data". The term "does not change relative" is indefinite.

Claim 65 recites, "A computer readable medium having stored thereon". The Examiner asserts that claim 65 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. There is no indication that the computer program set forth in the body of the claims provides any useful work for the

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computer readable medium; hence the body of the claims are not directed to a computer-readable medium.

The Examiner asserts that claim 88 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. There is no indication that the computer program set forth in the body of the claims provides any useful work for the computer readable medium; hence the body of the claims are not directed to a computer-readable medium.

Claim 102 recites, "A disk drive". See MPEP § 2172.01. The omitted elements are: how the limitations in the body of the claim are related to a disk drive.

Claim 118 recites, "A communication encoding apparatus". See MPEP § 2172.01. The omitted elements are: how the limitations in the body of the claim are related to communication encoding.

Claim 128 recites, "A communication encoding apparatus". See MPEP § 2172.01. The omitted elements are: how the limitations in the body of the claim are related to communication encoding.

Claim 155 recites, "A disk drive". See MPEP § 2172.01. The omitted elements are: how the limitations in the body of the claim are related to a disk drive.

Claim 171 recites, "A communication encoding apparatus". See MPEP § 2172.01. The omitted elements are: how the limitations in the body of the claim are related to communication encoding.

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Claims 1-10, 24-33, 38-47, 65-74, 88-97, 102-111, 118-137, 155-164 and 171-180 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, 24, 38, 65, 88, 102, 118, 128, 155 and 171 recite, "processing the initial binary data based on the comparison". The term "based on" is indefinite.

Claim 65 recites, "A computer readable medium having stored thereon". The Examiner asserts that claim 65 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. There is no indication that the computer program set forth in the body of the claims provides any useful work for the computer readable medium; hence the body of the claims are not directed to a computer-readable medium.

The Examiner asserts that claim 88 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. There is no indication that the computer program set forth in the body of the claims provides any useful work for the computer readable medium; hence the body of the claims are not directed to a computer-readable medium.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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4. Claims 1-10, 38-47, 65-74, 88-97, 102-111, 118-137, 155-164 and 171-180 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The steps in claim 1 are an abstract algorithm that can be carried out by hand with no link to any tangible process, machine, manufacture, or composition of matter.

The steps in claim 38 are an abstract algorithm that can be carried out by hand with no link to any tangible process, machine, manufacture, or composition of matter. Note: The Authoritative Dictionary of IEEE Standards terms defines processor as a system or mechanism that accepts a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Human beings and other computer programs are capable of accepting a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Hence the term "processor" does not cure the problem.

Claim 65 recites, "A computer readable medium having stored thereon". The Examiner asserts that claim 65 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. Computer programs are non-statutory. There is no indication that the computer program set forth in the body of the claims provides any useful work for the computer readable medium; hence the body of the claims is not directed to a computer-readable medium and the computer-readable medium serves only to store a non-statutory computer program set forth in the body to the claims 65-74:

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The Examiner asserts that claim 88 substantially recites a computer readable medium for storing the computer program set forth in the body of the claims. Computer programs are non-statutory. There is no indication that the computer program set forth in the body of the claims provides any useful work for the computer readable medium; hence the body of the claims is not directed to a computer-readable medium and the computer-readable medium serves only to store a non-statutory computer program set forth in the body to the claims 88-97.

The steps in claim 102 are an abstract algorithm that can be carried out by hand with no link to any tangible process, machine, manufacture, or composition of matter. Note: there is no link to the body of the claims and the disk drive in the preamble of claim 102. In addition, The Authoritative Dictionary of IEEE Standards terms defines processor as a system or mechanism that accepts a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Human beings and other computer programs are capable of accepting a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Hence the term "processor" does not cure the problem.

The steps in claim 118 are an abstract algorithm that can be carried out by hand with no link to any tangible process, machine, manufacture, or composition of matter.

The steps in claim 128 are an abstract algorithm that can be carried out by hand with no link to any tangible process, machine, manufacture, or composition of matter. Note: there is no link to the body of the claims and the disk drive in the preamble of claim 102. In addition, The Authoritative Dictionary of IEEE Standards terms defines processor as

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a system or mechanism that accepts a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Human beings and other computer programs are capable of accepting a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Hence the term "processor" does not cure the problem.

The steps in claim 155 are an abstract algorithm that can be carried out by hand with no link to any tangible process, machine, manufacture, or composition of matter. Note: there is no link to the body of the claims and the disk drive in the preamble of claim 102. In addition, The Authoritative Dictionary of IEEE Standards terms defines processor as a system or mechanism that accepts a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Human beings and other computer programs are capable of accepting a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Hence the term "processor" does not cure the problem.

The steps in claim 171 are an abstract algorithm that can be carried out by hand with no link to any tangible process, machine, manufacture, or composition of matter. Note: The Authoritative Dictionary of IEEE Standards terms defines processor as a system or mechanism that accepts a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Human beings and other computer programs are capable of accepting a program as input, prepares it for execution, and executes the processes so defined with data to produce results. Hence the term "processor" does not cure the problem.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(f) he did not himself invent the subject matter sought to be patented.

5. Claims 1-10, 24-33, 38-47, 65-74, 88-97, 102-111, 118-137, 155-164, 171-180 are rejected under 35 U.S.C. 102(e) as being anticipated by Nazari; Nersi et al. (US 6456208 B1, hereafter referred to as Nazari).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

35 U.S.C. 102(e) rejection of claims 1, 3, 9 and 10.

Nazari teaches a communication encoding method, comprising: obtaining initial binary data having a characteristic Hamming weight (the Abstract in Nazari teaches that Input block 200 in Figure 10 obtains initial binary data having a characteristic Hamming

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weight greater than 9), determining the characteristic Hamming weight of the initial binary data (col. 2, lines 5-10 in Nazari teach that the initial 32-bit binary input data is tested to see if the characteristic Hamming weight of the initial 32-bit input binary data is greater than 9); performing a comparison of the characteristic Hamming weight of the initial binary data with a predetermined value (Note: verifying that the initial 32-bit binary input data has a characteristic Hamming weight greater than 9 is a step for performing a comparison of the characteristic Hamming weight of the initial 32-bit binary input data with a predetermined minimum Hamming weight value of 9); and processing the initial binary data based on the comparison to thereby develop processed binary data having a Hamming weight not less than the characteristic Hamming weight of the initial binary data (col. 2, lines 16-21 in Nazari teach that if the initial 32-bit binary input data satisfies the coding constraint of (0, 11/11) and has characteristic Hamming weight greater than 9, then the 16-bit left half of the initial 32-bit binary input data is mapped to the 16-bit left half of the 33-bit binary output data, the 16-bit right half of the initial 32-bit binary input data is mapped to the 16-bit right half of the 33-bit binary output data and the 17th bit of the 33-bit binary output data is set to 1; hence the characteristic Hamming weight of the 33-bit binary output data is one more than that of the input).

35 U.S.C. 102(e) rejection of claim 2.

Hamming is defined as the number of one-valued bits; hence the definition of Hamming weight clearly suggests counting the number of one-valued bits in the initial 32-bit binary

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input data to determine the characteristic Hamming weight of the initial 32-bit binary input data.

35 U.S.C. 102(e) rejection of claim 4.

Col. 2, lines 29-37 in Nazari teach that if a violation occurs in the initial 32-bit binary input data a four bit replacement is used, which involves inversion of initial binary input data in the 32-bit binary input data.

35 U.S.C. 102(e) rejection of claim 5.

See Step 13 in Figure 4 of Nazari.

35 U.S.C. 102(e) rejection of claim 6.

See Steps 15 and 18 in Figure 4 of Nazari.

35 U.S.C. 102(e) rejection of claim 7.

See Step 22 in Figure 5A and Step 60 in Figure 7A of Nazari.

35 U.S.C. 102(e) rejection of claim 8.

See Steps 22 and 39 in Figure 5A of Nazari.

35 U.S.C. 102(e) rejection of claims 24-33.

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Claims 24-33 adds elements of a communication system such as conveying and receiving. Col. 1, lines 53-58 in Nazari teach that the invention in Nazari is provided as an improvement for the digital data communication and storage taught in col. 1, lines 10-15 in Nazari which inherently include conveying and receiving means.

35 U.S.C. 102(e) rejection of claims 38-47.

Claims 38-47 have substantially the same limitations as in claims 1-10.

35 U.S.C. 102(e) rejection of claims 65-74.

Claims 65-74 adds elements of a computer program to the limitations in claims 1-10.

See claims 23-30 in Nazari.

35 U.S.C. 102(e) rejection of claims 88-97.

Claims 88-97 adds elements of a computer program to the limitations in claims 24-33.

See claims 23-30 in Nazari.

35 U.S.C. 102(e) rejection of claims 102-111.

Claims 102-111 have substantially the same limitations as in claims 1-10.

35 U.S.C. 102(e) rejection of claims 118-137.

Claims 118-137 have substantially the same limitations as in claims 1-10.

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35 U.S.C. 102(e) rejection of claims 155-164.

Claims 155-164 have substantially the same limitations as in claims 1-10.

35 U.S.C. 102(e) rejection of claims 171-180.

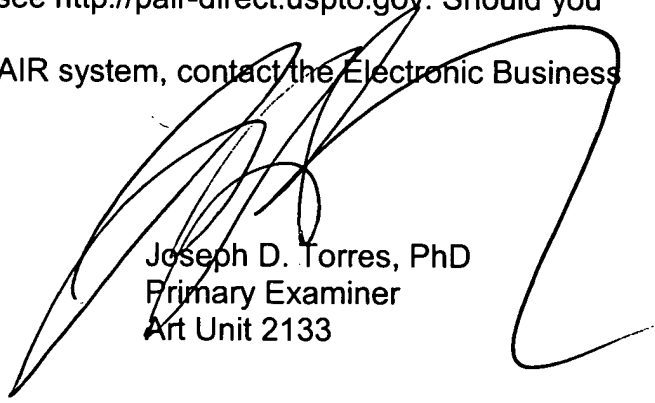
Claims 171-180 have substantially the same limitations as in claims 1-10.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133